
APPENDIX A: POPULATION PROJECTION MODEL AND METHODOLOGY

The population, housing, and school enrollment projections that appear in this plan were developed by the **Forecast 2015 Committee**, which was an ad hoc committee of citizens appointed by the Board of Supervisors in 1995 specifically for this purpose. Its report, entitled Forecast 2015, and the projections contained therein were approved by the Board on January 17, 1996. Readers who desire more detailed information about the projections or the projection methodologies that were used are encouraged to review the Forecast 2015 report.

The population projection model incorporates elements of *cohort-survival*, *modified exponential*, and simple *multiplier* models to project the future age distribution, the size of the housing stock, and, most importantly, the total future population of the County. The projection of future levels of housing construction involves a *modified exponential* model of growth that assumes there exists an upper limit or ceiling to the number of housing units that can potentially be built in York County.³ Land is a limited resource, and the amount of land that can be developed residentially is limited by zoning. To project the future number of housing units, the model reduces this upper limit by the product of unused capacity (potential future units) and the rate at which unused capacity ratio, which is the rate at which undeveloped residential land *remains* undeveloped.

To calculate the increase in population resulting from the projected increase in housing units, a vacancy rate must first be applied to translate housing units into households. To this projected household total is applied an average household size, and the result is the total household population of the County. Next those residents who do not live in households must be added. These people represent the County's **group quarters population**, which includes people who live in military barracks, nursing homes, and correctional institutions. The result is the County's total population.

Assumptions

Projections are only as good as the assumptions on which they are based. The major assumptions underlying these population and housing projections are presented below:

- Land uses and residential densities prescribed through zoning and the Comprehensive Plan will not change significantly in the next twenty years.
- Fifteen percent (15%) of the available land in the upper County is undevelopable because of steep slopes.
- Approximately 80% of the available land designated RR (Rural Residential) will be developed without public utilities and thus with a minimum lot size of two acres.
- One fifth of the available land in the lower County is undevelopable because of non-tidal wetlands.
- Based on existing development, current zoning, and the infrastructure and environmental constraints noted above, the maximum number of housing units that can be built in York County is 31,400.
- In the lower County, the Unused Capacity Ratio U will fall steadily and sharply, generating a higher rate of growth than in the upper County, where the unused capacity ratio is assumed to fall, but much more slowly than in the lower County.
- As the lower County becomes more and more densely developed, the upper County will become increasingly attractive to developers and home buyers.

³See Donald A. Krueckeberg and Arthur L. Silvers, Urban Planning Analysis: Methods and Models (New York: Johan Wiley & Sons, 1974), pp. 264-266, and Richard K. Brail, Microcomputers in Urban Planning and Management (New Brunswick, NJ: Rutgers, The State University of New Jersey, 1987), pp. 66-69.

- The County's average household size will continue to decline, although relatively slowly, through the year 2005 and essentially level off thereafter.
- The County's group quarters population will remain constant at approximately 510 through 2015.
- On average, the County's vacancy rate will be 5.5% through 2015.